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ABSTRACT

A facet of the construction of children's theory of mind is examined in a study with a two-fold purpose: to investigate whether story scenarios of typical social interaction could facilitate young children's recognition of others' false beliefs, and to study how children's concepts of moral judgment might be influenced by the recognition of a character's false beliefs. Seventeen preschoolers, ages 3-5, at a midwestern university campus day-care center were read stories about children doing familiar things in familiar settings, wherein the protagonist did not know by whom the actions were performed or to what intent. Afterward, the preschoolers were asked to make moral judgments and explanations about the stories. The results corroborate previous research, indicating that 3-year-old children tend to have difficulty conceptualizing how others may have a false belief, while 4- and 5-year-olds were more accurate in recognizing that the protagonist would have a false belief. Other differences between the age groups were also noted. Results suggest that stories, especially moral stories, may be a useful tool in helping children think about other people's perspectives and how people can make judgments when they do not have all the information. (Contains 23 references.) (MT)

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Use of Moral Stories to Assess Relations Between Preschoolers' Moral Judgment and Reasoning and False Beliefs

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Preschool children as young as three years of age have been able to distinguish the moral from the social conventional and personal domains of social cognition in story examples (Nucci, 1992; Smetana, 1983; Turiel, 1983; Turiel & Davidson, 1986). This knowledge is likely constructed from the multitude of social experiences that children encounter with both peers and adults; adults often help provide interpretations for some of those social encounters (Brown & Dunn, 1991; Dunn, 1988; Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991). It is this social context to which Astington and Olson (1995) refer when describing the integration of children's theory of mind with social theory.

In much of the literature studying young children's construction of a theory of mind, partial stories involving social contexts are provided for the children's interpretation, their belief or an intuitive theory. Although the notion of young children actually possessing a theory or belief may be somewhat controversial (Feldman, 1992), the coherency of this belief has been found when children were told stories involving (a) a description of a character's desire (Bartsch & Wellman, 1989), (b) a description of characters' surprise (Wellman & Banerjee, 1991), (c) a description of characters' unfulfilled intentions (Moses, 1993), an (d) pretense, plans, and emotions (Astington,

1993). So far, none of this research has investigated young children's moral reasoning beliefs about characters involved in moral situations when one character doesn't know who actually perpetrated either the moral deed or transgression.

At the crux of children's theory of mind is an ability to think less egocentrically, that is, children need to be able to put themselves into the character's shoes and make decisions or judgments about other's actions based on the evidence that the character would have. Instead, young children under the age of four years respond to the typical false belief task egocentrically by saying that the character knows what the child knows (Astington, 1993; Flavell, Green, & Flavell, 1995; Mitchell & Lacohee, 1991; Perner, Leekam, & Wimmer, 1987).

At a seminar during the 1995 AERA Annual Meeting, Astington and several associates (1995) made the case that young children's theory of mind could be investigated further by using stories that would require the children to use scientific reasoning about the availability of evidence to characters. Their findings indicated that using stories involving two or more characters could elicit scientific reasoning responses in young children while also reflecting young children's use of false beliefs. These stories required children to make judgments about each character's knowledge based on the evidence that would have been available to each character. Again children under the age of four years could not reason without being egocentric; what they knew had to be what

all the characters knew. Moral reasoning would be similar to scientific reasoning in that it would entail the need to have evidence available for a judgement. In the case of social situations involving moral deeds or transgressions, the evidence may include intention or desire. Evidence may help children provide reasons for their moral judgements.

Young children are capable of providing reasons for their moral judgements, generally based on their conceptions of the moral rules (Piaget, 1932). However, young children's conceptions, as part of their theory of mind, can include false beliefs about information that they assume another knows because it is known to them.

In many social situations, people may have a difficult time remembering who did or said what to whom, or the deed was not observed by anyone. At those times, some evidence is used to infer the perpetrator or the intentions of the perpetrator, leading to a possible false belief about who was the actual perpetrator or what the perpetrator's intentions or desires were. Although even three-year-olds have been found to recognize other's desires (Wellman & Banerjee, 1991), there has been no research investigating whether young children's theory of mind containing false beliefs may influence their ability to make accurate moral judgements and reasons when social situations involve opportunities to make inferences.

Feldman (1992) has suggested that to further investigate children's construction of a theory of mind that a methodology "to study scientifically the interpretive processes

of cognition, including our essentially interpretive understanding of stories and of other people's intentional states" (p. 116) might be needed. Asking children for their interpretations of story characters' knowledge, especially characters' knowledge that may include false beliefs has been a frequently used method. Young children have been asked to display other interpretive processes such as moral judgement and reasoning in the well researched area of social cognition. Therefore, the purpose of the present study was two fold: (a) to investigate whether story scenarios of typical social interactions could facilitate young children's recognition of others' false beliefs and (b) to study how children's concepts of moral judgement might be influenced by the recognition of characters' false beliefs. In other words, would the "acquisition of critical concepts" (for example false belief) permit "increasingly complex understanding of social interactions" (Astington & Olson, 1995, p.188), in this case social interactions involving either moral deeds or transgressions?

Method

Subjects

A preliminary sample included 17 preschool children (M = 4 years 2 months), including 6 three-year-old children and 11 four- and five-year-old children (9 four- and 2 five-year-old children). All children were recruited from two university child care programs on a large Midwest university campus. There were 11 girls and 6 boys

participating. All children but one were Caucasian; all were children of faculty, staff, or students of the university.

Procedure

Individually, each child was told 4 short stories (see Table 1) about children involved in typical social interactions occurring either in a home or school context. Each story was told with props to act out each story. The protagonist, a child, in each story did not know which one of the other two or three children in the story actually committed either a helpful or nonhelpful deed. The stories alternated between types of deed. Two stories involved a helpful deed; two stories involved nonhelpful deeds. The first story contained a helpful deed; the second story included a nonhelpful deed, and so on. The order did not vary across subjects. One of the stories is a similar story used by Astington and her associates (Gopnick & Astington, 1988) involving an appearance-reality distinction and deception. None of the stories had the perpetrators' intentions stated. The gender of the perpetrator was equally represented. The stories with follow-up questions took approximately 15 minutes to administer.

After each of the 4 stories, the children were audiotaped while responding usually to 8 questions including 2 questions that checked for the children's conception of false belief and 2 questions that asked for the children's moral judgement first when the deed was committed by a wrong person (the protagonist's false belief based on the evidence

given of another character playing close to the protagonist) and second when the deed was committed by the actual perpetrator. After each moral judgement question, the moral reasoning question of "why?" was asked (see Table 1 for stories and sample questions). A correct response was scored as 1; an incorrect response was scored as 0. Scores for each similar type of question across the four stories were summed.

Results

One-tailed correlational analyses indicated some relationship between children's understanding of others' false beliefs and their moral reasoning (Table 2). Age differences were analyzed using chi-square, which did not show any significant differences but did show some interesting trends in differences. For the moral judgement question concerning the protagonist's false belief of the perpetrator, none of the three-year-old children compared to 18% (2) of the 4-5-year-old children were able to answer correctly on more than 2 stories. For the moral judgement question concerning the actual perpetrator, 50% (3) of the three-year-old children compared to 64% (7) of the 4-5-year-old children were correct on all 4 stories.

There were no significant age differences found for the moral reasoning question concerning the protagonist's false belief of the perpetrator. There were stronger age differences found for the moral reasoning question concerning the actual perpetrator. Thirty-six percent (4) of the 4-5-year-old children compared to 17% (1) of the three-year-

old children responded correctly to 3 or more stories.

Conclusions

This study corroborates previous research findings that three-old-children tend to have difficulty conceptualizing how others may have different knowledge depending on the evidence, a false belief. The four- and five-year-old children were more frequently accurate in recognizing that the protagonist would have a false belief. The older children were not fooled by the question asking them to make a moral judgement about someone who did not actually commit the deed. The three-year-old children were more likely to be fooled by this type of question. The three-year-old children's confusion continued even when asked for the moral reasoning of the actual perpetrator's deed.

However, the three-year-old children were often not blatantly wrong by giving an erroneous response rather they were wrong because they did not give a response. It was as though they were beginning to realize that the protagonist was not aware of the same information that they, the children, had. The younger children seemed unsure how to answer and so often shrugged their shoulders or said that they didn't know.

This study also found that young children's accuracy in recognizing the protagonists' false beliefs was related to their accuracy in moral reasoning for the actual perpetrators's deeds. Therefore, these stories did elicit some responses that could link children's theory of mind, a conception of false belief, with another conceptual area,

moral reasoning.

This study's findings help expand the research reported at the 1995 AERA conference in San Francisco concerning children's conceptual link between false belief and scientific reasoning in the physical realm to showing young children's conceptual links between false belief and moral reasoning in the social realm.

This study's limited findings do support Wimmer and Weichbold's (1994) conclusions that three-year-old children still have problems with false belief reasoning even when given reality-based predictions. These stories were all about children doing familiar deeds in familiar social settings, home or school.

Limitations

Besides the sample needing to be larger and ethnically diverse, the stories themselves may need to be revised. The moral transgression stories may have had more deception than the stories in which the deed was helpful. The stories were intended to focus primarily on the moral deed or transgression, not the deception that a character might use. However, it is difficult to think of reality-based scenarios in which children committing a transgression would not be somewhat deceptive. Perhaps comparisons may need to be made between children's responses to stories involving all helpful deeds with stories all dealing with transgressions. It may have been the transgressions with the deceptions that were more confusing than the helpfult deeds for the three-year-old

children. Or having stories about both helpful and nonhelpful deed may have been confusing for the three-year-old children. The questions to elicit children's moral judgement concerning the protagonists' false belief may have been too confusing. They asked for the child's judgement not the protagonists' judgement. This was done to avoid too many perspective-taking type questions.

Implications

This study adds further data to the growing body of research investigating children's developing theories of mind. False beliefs can occur as prevalently in a social context as in the physical realm. Children by the time they are three years of age are likely to have encountered many instances of not knowing by not actually observing who committed either helpful or nonhelpful deeds nearby them. Yet, they may need to determine or judge that deed. Stories, especially moral stories, may be a very useful tool to help children think about other people's perspectives and how people can make judgements when they don't have all the information. Early prejudice may begin in a similar manner. Children's theories of mind need to include the variety of social and moral contexts beyond deception and lying. Both helpful and nonhelpful behaviors can not be observed and therefore be misjudged equally.

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Table 1

Four Moral Stories

1. These children are playing in a classroom just like your classroom. Cindy was doing a puzzle at a table where Lori was playing. Cindy was having trouble with one of the puzzle pieces. While she was away getting a drink of water, Jake walked by and put the pieces of the puzzle together. When Cindy came back, the puzzle was all together.
2. Mark, Mary, and Mary's little brother, Jim, were playing on the floor in Mary's bedroom. Mary and Jim's mother came in and told them, "It's time to pick up for dinner," and then she left. Mary put her teddy bear into her toy box and went to the kitchen to help her mother. Her little brother, Jim, went to her toy box and took out the teddy bear and hid it under her bed and then went into the bathroom. Mary cam back to look for her teddy bear, but it wasn't in her toy box.
3. John and Brandon were playing in the block area. John began picking up some blocks. While John left to get a tissue, Julie came by and put the rest of the blocks away and left the room. When John came back, he saw that the blocks were already put away.
4. Jenny's mom just finished making some apple pies leaving flour spread all over the floor. She told Jenny and Jenny's older brother, Mike, "You can not have any

apples because I need all of them to make the last pie." Then they all left the kitchen. Since Mike had bigger feet than Jenny, Jenny put on a pair of Mike's shoes and went and got an apple even though her mom told her not to. Since Jenny was wearing Mike's shoes, she left a trail of footprints in the flour on the floor that were big like Mike's shoes and not small like Jenny's. Jenny's mom cam back to find an apple gone.

Sample questions:

1. Does Jenny's mom know who took the apple?
2. Who does Jenny's mom think took the apple?
3. Whose shoes and footprints are bigger, Jenny's or Mike's?
4. Were the trail of footprints big, like Mike's, or small like Jenny's?
5. Was it bad or good for Mike to take the apple? Why?
6. Who really took the apple?
7. Was it bad or good for Jenny to take the apple? Why?

Table 2

Means (SD) and Intercorrelations of Age and Summed Story Responses to Two False Belief, Two Moral Judgment, and Two Moral Reasoning Questions (N = 17)

			Intercorrelations						
Variable	Mean	(SD)	1	2	3	4	5	6	7
1. Age in Months	50.1	(8.2)	--	.63**	.07	.21	.14	.04	.26
2. Protagonist's Ignorance	2.1	(1.7)		--	.59**	-.02	-.09	-.30	.39
3. Protagonist's Belief	1.6	(1.5)			--	.20	.16	-.25	.52*
4. Moral Judgment (wrong)	.9	(1.1)				--	.98+	-.00	.28
5. Moral Reasoning (wrong)	.8	(1.1)					--	.03	.28
6. Moral Judgment (correct)	3.5	(.7)						--	.18
7. Moral Reasoning (correct)	1.9	(1.2)							--

* $p < .05$; ** $p < .01$; + $p < .001$

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